

In claim 4, line 1, please change "claim 3" to ✓--claim 2--.

In claim 8, line 1, please change "claim 1" to --claim 2--.

Please ADD new claim 9,

*for*  
*A2*  
--9. In a laser scanning microscope with an AOTF (acousto-optic tunable filter) in the laser input-coupling beam path, an improvement comprising a temperature gauge being provided in one of the environment of the AOTF and the vicinity thereof and connected therewith; means for one of cooling and heating at least one of the AOTF and its environment; and wherein said means for one of heating and cooling includes regulation to a constant value and said AOTF is driven by a constant frequency.--

#### REMARKS

Claims 2 and 4-9 are now pending in the application. The Examiner has rejected claims 1-8 under 35 U.S.C. § 103. Claims 1 and 3 have been canceled, claims 2, 4 and 8 have been amended and claim 9 has been amended. The foregoing amendments and following remarks are considered by applicants to overcome each of the Examiner's outstanding rejections. An early Notice of Allowance is therefore requested.

In paragraph 2 of the Office Action, the Examiner rejected claims 1-2 due to certain informalities. Claim 1 has been canceled. Claim 2 has been amended to insert the phrase --(acousto-optic tunable filter)-- as suggested by the Examiner. Consequently, applicants believe that this objection is overcome.

In paragraph 4, the Examiner rejected claims 1-8 under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Kemeny et al. (U.S. No. 5,039,855). The examiner contends that the prior art describes the problem related to the use of AOTF and suggests to measure the temperature of the AOTF. The examiner also contends that Kemeny discloses a device having temperature sensors and a heater, which in combination with the prior art would render the claimed invented obvious.

Claim 2 has been amended to include a temperature sensor, and both heating and cooling means. Including a cooling means in addition to a heating means allows better control of the temperature of the AOTF. Unlike the device described in Kemeny, the cooling means actively reduces the temperature of the AOTF. As mentioned by the Examiner, the device in Kemeny simply cools down the AOTF by turning off the heating element. *Yes, this is control*

In addition to adding the cooling means, claim 2 has been amended to recite that said cooling and heating means regulates the temperature of the AOTF to a constant temperature. As mentioned above, having both the heating and cooling means allows for the ability to accurately regulate the temperature. This ability can have important implications to the field of laser scanning microscopes opposed to the field of spectroscopy which is the subject matter of Kemeny.

In a laser scanning microscope, pixels of the specimen will be excited for a brief period of time. The period of time can be in the microsecond range. Waiting for the AOTF to cool down to the desired temperature is not be feasible with such high speed excitations.

Kemeny attempts to adjust for temperature variations by disclosing on page 13, lines 40-43, that the microprocessor will vary the driving frequency for the AOTF depending on the temperature readings from the temperature sensor. This solution, however, is not quick enough to handle pixel times in the microsecond range. Keeping the temperature constant and the driving frequency constant avoids intensity variations and allows for the fast pixel time used in the laser scanning microscope.

Thus, Kemeny, which is directed to a spectrometer and does not focus on holding the temperature constant to keep the driving frequency constant, cannot be combined with the prior art to render amended claim 2 obvious. Given the particular nature of the problem addressed in laser scanning microscopes by the claimed invention, there would also be no suggestion to combine Kemeny with the prior art.

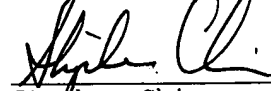
Newly added claim 9 more particularly recites this benefit and is also

not rendered obvious by the combination of Kemeny with the prior art.

Claims 2, 4-9, all the claims pending in the application, are believed by applicants to define patentable subject matter and should be passed to issue at the earliest possible time. An early Notice of Allowance is requested.

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Respectfully submitted,



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